

LOOKING BACK;

A GLANCE FROM EMPIRICISM TO EXPERIMENT,
FROM SUPERSTITION TO RESEARCH.

CHRISTIAN SCIENCE REFUTED.

*Delivered before The Middlesex Hospital Medical Society,
on November 11th, 1909.*

BY

SIR HENRY MORRIS, BART., M.A., F.R.C.S.

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WHEN, through the Honorary Secretary, your Society paid me the compliment a fortnight ago to ask me to give the Opening Address of the Session, my mind reverted to the past, to the long ago, and at once assumed the attitude of looking back.

I remembered that in my earliest days at the Hospital, in the first years of the seventies in fact, I held the office which our Chairman holds now, of President of the Middlesex Hospital Medical Society. I recalled with what satisfaction I learnt that this Society, founded as it was in 1774, is one of the oldest of the Medical Societies in London, and I began to reflect upon the vast changes in medical opinion, in professional knowledge, and in curative science which have occurred not only since the birth of this Society, but in the much shorter period since the time when I was President.

And if I may state in five words the chief cause of those changes, I will make use of the expression of (I think it was) John Donne, a poet and divine in the reign of James the First, and say that they are due to "*the sacred hunger of science.*" And if I were asked "What kind of science?" I would answer "Physical science which searches after truth by the method of experiment;" that science which

seeks for knowledge without first asking what direct or tangible benefit is likely to be derived from it. In the fields of research there is nothing to distinguish, at first sight, which are the profitable and which the unprofitable plots, like the interesting Babylonian Landmark or Boundary Stone marked off the ownership of different plots of ground, and which you can now see in the British Museum. But though scientific research may start with no immediate purpose but its own, yet its hope is progress; its creed, that "knowledge is power;" and its expectation that, without asking how, yet somehow its results will ultimately be beneficial to humanity.

Leslie Stephen, in his introduction to his work on "Utilitarians," has written, "The love of truth in the abstract is one of the weakest influences in human nature." Well! Be it so. Still, "the sacred hunger of science" is keenly felt by many, and in some it would seem to be a necessity laid upon them, like the necessity to preach felt by St. Paul. And just as St. Paul exclaimed "Yea, woe is unto me if I preach not the Gospel," so these eager investigators would in the same spirit cry out, "Yea, woe is unto us if we make not experiments."

It is by means of experiments which can be planned and controlled at the will of the explorer, and especially by experiments on living animals, that so many of the recent changes have been made in our views of the pathogenesis and diagnosis of disease, particularly of fevers and the infective diseases of wounds, as well as in our methods of treatment.

But I would not have you suppose that I regard research by experiment as of recent or modern date. It is not so, not even research by experiments on animals.

Hippocrates was the first to lead medicine in the right track. He employed experiment as well as observation, and thereby succeeded in freeing medicine from the fantastic speculations of the pre-Socratic philosophers. He was, moreover, the fountain source or spring of the flowing stream of medical science, whose course however was soon to be checked by the dialectical and rhetorical gyrations in

the whirlpool of Greek philosophy, by the pitfalls of Galenic Aristotelianism, the shifting quicksands of Scholasticism, and the deadening and paludal morass of the Middle Ages; but it came bubbling out again as little rivulets into the sunshine of the Renaissance, acquired force and volume by the Reformation, and flowed onwards unchecked and in full stream through the smooth and level plains beyond the Revolution; there it is bounded only by the horizon, the clouds and darkness of which are steadily being pierced, dissolved, or made to recede by the penetrating rays of the lime-lights of modern methods of Research.

Galen, notwithstanding the obstacles he raised, by his mistaken and misleading worship of Aristotle, to the progress of medicine for a period of nearly 1500 years, nevertheless asserted the importance of Anatomy—though unfortunately he only knew Anatomy through the dissection of animals and not of the human subject; and he was the parent of experimental physiology.

Towards the middle of the seventeenth century Descartes made great use of Vivisection, and the recluses of Port Royal—some of the most learned philosophers and educationists of their time—resorted to dissection of living dogs and other animals to demonstrate the circulation of the blood; and were accused, possibly as unjustifiably as the scientists of to-day, of being indifferent to the cries of their victims.

In other departments of physical science recourse was had in the past centuries to experiments.

Bacon, in his "Natural History," describes the importance of making experiments, and indicates a very large number.

Pascal, about the year 1648, made most important and decisive experiments on the weight of air, experiments which, according to Sir John Herschel,* "tended more powerfully than anything else which had previously been done in science to confirm in the minds of men that disposition to experimental verification which had scarcely yet" (he was writing in 1830) "taken full and secure root."

Boyle, in the middle of the seventeenth century, instituted exact experiments into the relation between colour

* "On the study of Natural Philosophy."

and heat, and thereby laid the foundation for the union of optics and thermotics; he also advanced the science of hydrostatics, and established chemistry on a real basis as a science capable of dealing with the organic world. Boyle constantly insisted on two fundamental principles, namely, (1) the importance of individual experiments, and (2) the comparative unimportance of the teaching of antiquity on physical science. He inherited, so to speak, these opinions from Bacon—"First to doubt, then to inquire, and then to discover." Boyle's propensity to doubt is evident throughout his writings, and he gave to his *Essay on Crystals* the title "Doubts and Experiments touching the Curious Figures of Salts."

The determination to subordinate old notions to new inquiries was emphasized in Boyle's lifetime by the incorporation in 1662 of the Royal Society, which was formed with the avowed object of increasing knowledge by direct experiment. According to Dr. Paris ("Life of Sir Humphry Davy") the Charter states that the Society was established for the improvement of Natural Science, and that this epithet *Natural* was introduced in contra-distinction to *Supernatural*, because at that period the arts of witchcraft and divination were very extensively encouraged.

In the eighteenth and nineteenth centuries experimental research was very rich in discoveries. Research by experiment has been enormously advanced and extended by chemistry, photography, the improvement in instruments, and other means. Animal chemistry has been of the greatest assistance to the physiologist and pathologist, as have the microtome to the histologist and embryologist, and the microscope to the biologist and bacteriologist.

The microscope was essential for experiment as well as for observation. By its aid it was ascertained that the organization of vegetables is nearly as complicated as that of animals, that there is harmony between the animal and vegetable kingdoms, and a close relationship between the physiology of plants and animals. Without the microscope bacteriology would have been impossible, and some of the greatest developments of scientific research would never

have been brought about, except by the help of microscopes of high powers.

Though the microscope in its crudest form was invented so long ago as 1590, and was exhibited in London in 1620 by Drebbel, it was only by slow degrees that it reached its present state of perfection. Improvements are still in progress, and only the other day a demonstration of a new invention was given at the Academy of Sciences of Paris. It consists of photography, by cinematograph, of microscopic images obtained by side-lights, which constitutes the ultra-microscope. By this combination of cinematograph, microscope, and side-lights, photographs are obtained shewing microbes, so small as to be invisible to the eye under the ordinary illumination and microscope, moving in their natural surroundings. By magnifying, the microbes of sleeping sickness are seen twisting about among the red cells of the blood, and are said to appear as large as eels.

Specialism, in spite of certain definite drawbacks, has unquestionably been another cause of advance in medical science. Medical science, in common with industries and other branches of science, has made remarkable progress in accuracy, as well as in extent of knowledge, through the experience and investigations of those who have specialized in various departments.

In the past one of the great obstacles to the advance of medicine was the tenacity of unproven hypotheses. By experimental methods of research the truth or falsity of hypotheses is tested, in many instances very quickly, before they are either accepted as explanations of symptoms, or put into practice in treatment. Experiment is like cross-examination—it unravels the essential from the unessential, the relevant from the irrelevant; it insists on direct answer to the question asked. By experiments properly controlled we obtain results on which we can reliably base opinion, and form absolute beliefs.

This certainty, this absolute belief, is a matter of the utmost importance to us in the practice of our profession. Our object in the treatment of disease is to act, and our desire is to act successfully. And this desire to act successfully

is the keynote of all actions; it is one of the ultimate facts of human nature. But human nature, as James Fitz-James Stephen* states, is so constituted that all actions involve belief, and all successful action involves true belief; and to attain to true belief every source of error must be eliminated, every doubt or uncertainty removed.

In the exercise of our curative science we want our results to be as far as possible *certain*. The conditions necessary for unerring action are first to know what should be done, and second to have the mind to do it. We should like in all cases to be able to say with Hamlet:

Seems Madam! Nay, it is. I know not seems.

In respect to many diseases and injuries, the safeguards of experimental research have obtained for us this certainty, and we can put our treatment into practice with the full assurance that we are taking the direction of success, though, even so, of course we cannot always command success, for the reason that we have to war against disease and death, and death we know is the lot of all:

All that live must die,
Passing through nature to eternity.

But our deservedly high appreciation of experimental research must not dull our sense of the great value of clinical and post-mortem observation. The laboratories are so full of promise, such a land flowing with the milk and honey of prospective discoveries—far off it may be, but yet so rich—that there is some risk that they may monopolize attention.

The wards and the post-mortem theatre also yield products, not a few and by no means unimportant or insignificant. The acute and minute observation, quite apart from experiments, of trained clinicians and pathologists has resulted in the discovery of many facts of first-rate importance, and the generalizations therefrom have yielded sound and guiding principles of diagnosis and treatment. Thus have become famous the names of Morgagni and Rokitansky, of Sydenham and Bœrhave, of Watson and Murchison, of

* "General View of the Criminal Law of England."

Hilton and Paget, of Wilks and Gull, of De Morgan and Charles Moore, and many others.

Percussion and auscultation, the stethoscope and thermometer, the ophthalmoscope, the laryngoscope, and other instruments for illuminating parts and cavities of the body have increased the means and the efficiency of clinical examination and diagnosis.

The importance of developing the faculty of observing cannot be exaggerated. Every medical student, every medical practitioner, can and ought to cultivate it. At all times and in all places it can be exercised; whereas experimental research requires special and often elaborate conditions and equipment. Moreover, we all cannot give up the time from our particular lines of work, which experimental research demands, and not everyone is endowed with the qualifications requisite to pursue it successfully; so that many, the majority in fact, must be content to employ the knowledge acquired by the experimental work of others.

Observation it is true, compared with experiment, is very slow, and is like the crawl of the tortoise in contrast with the strides of the ostrich; but it improves with practice, ripens with age; and the co-ordination of collective observation increases experience and expedites conclusions.

Experience is by industry achieved
And perfected by the swift course of time.

In my recent "Sir William Mitchell Banks" lecture I shewed how the modern operations for cancer of the breast have been established by the careful observations of clinical phenomena, and of the facts of morbid anatomy, made in this Hospital by Moore and De Morgan, and which have been confirmed quite recently by Mr. Handley.

Another illustration of the brilliant results of individual and collective observation is the discovery of the association of myxœdema with the loss of the thyroid gland; thence followed modifications in the operative treatment of the thyroid, and the prevention and cure of myxœdema by the administration of thyroid extract. I am, however, aware that these results connected with the thyroid are sometimes,

but unjustly, claimed as a triumph exclusively of experimental research.

The enormous strides made by scientific researches afford reason to expect that the so-called systems of medicine, such as those associated with the names of Hoffmann, Brown, Cullen, and others, each of which is based upon the idea of finding an explanation for every form of disease, have vanished for all time.

At the present time, however, quackery is rife in Germany in the form of the "Natural" treatment (*Naturheilkunde*), and in this country and America in the form of Christian Science.

We are much indebted to Mr. Stephen Paget for his instructive book and his recent address on Christian Science; but there is one aspect which he has not referred to, and on which it is impossible to speak without trespassing beyond the bounds within which it is usual to limit discussion on medical subjects; yet it is with reference to this aspect that I crave your attention for some minutes.

The teaching and practice of Christian Science ignore all the physical reality of sickness, set aside all the recognized means of curative science, and rely entirely on an appeal to "*the source of life, for more life.*" Its method is to call on the Divine Spirit by means of concentrated thinking, and by thus drawing upon "Spiritual force" to remove an *idea of disease*—the disease itself being said to have no actual or real existence.

In theory Christian Science healing differs from Faith healing in this: Faith healers do not doubt the reality of disease and suffering, but believe that the Spiritual and Divine force neutralizes and counteracts them; whereas the Christian Scientists deny entirely the existence of a body or of pain and sickness, and profess to call down the Divine influence to overcome a false idea—a misimpression.

Like the saints of old, Mrs. Eddy and her followers claim the true source of their cures to be the direct action of God. Such a claim, if not put forward in so many words, is *de facto* a claim to be able to work miracles, and none the less so because they talk and write in psychological

manner of the “power of an idea” and the “annihilation of an illusion.” A miracle is defined as a plain and manifest exercise by the agency of man (including prayer and contemplation under the term agency), or by God at the call of man, of those powers which belong only to the Creator and Lord of Nature. I purposely omit in this definition the question of “*signal*ity,” based on the Greek word *σημείον*, of which the word “miracle” is the ordinary translation, and from which the word semeiology (knowledge of the signs and symptoms of disease) is derived.

The Christian Scientist cannot get away from the fact that, on his own shewing, he thus attempts to work miracles. It is to the purpose therefore to criticise the “cult” from this point of view.

The miracles of which we have authentic record are (1) those of the New Testament, (2) those of the Old Testament, and (3) the miracles of the Early Christian Church—the so-called ecclesiastical miracles.

The miracles attributed to the Roman Emperor Vespasian were no doubt pure fabrications, and Mahomed’s miracles read like sleight-of-hand and jugglery.

The miracles of the New Testament were performed (*a*) by Christ himself, (*b*) by the Apostles, and (*c*) by the Disciples. There is no difficulty in shewing that Christian Science departs in four important particulars from the miracle working described in the New Testament. The points of difference I refer to are that the Christian Scientist (1) requires faith or self-confidence in the patient; (2) attributes therefore insufficient importance to the faith or “mental concentration” of the healer himself or herself; (3) refuses to employ any physical means of treatment; and (4) is unable to perform certain acts which, we are explicitly told, could be done by those who worked miracles under the Christian dispensation.

Many of the New Testament miracles were those of *healing*: those of the woman cured of an issue of blood, the leper cleansed of his leprosy, and the blind men restored to sight by mere touch, were performed by Christ himself on persons who were told their faith had made them whole: those of the

widow's son, Jairus' daughter, and the son of "one of the multitude" seen after the transfiguration, were wrought by Christ through the faith of the parents of the afflicted. The centurion's servant was cured of the palsy through the faith of the centurion, which was said to have been greater than any which had been found even in Israel.

I. In neither of these four last-named cases was there any co-operation on the part of the individuals restored to health. In the performance of the miracles wrought upon them they were purely passive agents. Christian Science on the other hand requires an effort of contemplation or mental concentration, of will power, or of faith, on the part of the patient to be cured. She cannot, however, appeal to the New Testament for support of this teaching, for besides the instances of the substitution of the faith of another for that of the person who was the subject of the miracle, there were other miracles in which there was no such substitution. Neither the man blind from his birth, nor the nine lepers, nor the man with the legion of devils, are stated to have exhibited faith by prayer, or otherwise, before or during the accomplishment of the miracle. Nor did any other person do so on their behalf. In the case of the cripple of Lystra, St. Paul, "steadfastly beholding him and perceiving that he had faith to be healed," cured him. The cripple had heard Paul speak, but he had made no appeal or sign or personal effort to be healed. St. Peter healed the lame man at the gate of the Temple, cured Æneas of Lydda of the palsy, and restored Dorcas, *alias* Tabitha of Joppa, to life; but there was no co-operation on the part of those treated. The miracles of Philip and Stephen testify apparently to the same fact, for being "full of faith and power" themselves, they "did great wonders and miracles among the people."

Thus, though Christian Scientists are able to refer in support of their own method of "absent treatment" or *healing in absentia* to the single instance of the centurion's servant, there are many cases recorded in which there was no co-operation or participation in thought-concentration on the part of the patients themselves. Is it not therefore effrontery on their part to ascribe their failures to the

patients' defective capability of thinking, or deficient force of will, or want of faith?

II. In the cures which were wrought by the Apostles and Disciples the faith of the active agent (*i.e.*, the Apostle or Disciple) was of primary importance—in fact an essential factor for the healing. When an explanation was sought of the failure of the Disciples to cure the epileptic and lunatic boy, the reply was, their unbelief. On the other hand, the seventy disciples who were sent, two and two, into every city and place, were believers. They returned from their journeyings with joy, proclaiming “Even the devils are subject unto us through thy name.” Further, there is the reply to the Apostles about the grain of mustard seed and the sycamine tree, when they asked “Increase our faith.” Is not the correct argument from analogy, therefore, that when the Christian Scientists fail it is on account of their own deficiencies—of their own lack of power?

III. Nor can they justify by New Testament teaching their own rejection of every kind of physical aid in their treatment of the sick. In the case of the man blind from his birth, Christ made clay with his spittle, and after anointing the eyes of the blind man with the clay, sent him to wash in the pool of Siloam. Repeated stress is, in the narrative, laid on the clay and the washing. Again, we are told “God wrought special miracles by the hand of Paul, so that from his body were brought unto the sick handkerchiefs or aprons, and the diseases departed from them, and the evil spirits went out of them.”

IV. It has been held that the power of working miracles was transmitted to the Apostles and Disciples in such a manner that it came necessarily to an end on the death of the last of the Apostles.* If they dispute this, are the Christian Scientists prepared to base their self-confidence as healers on the only passage in the Bible which it is said gives any support to the idea that miracles are in these days performed, and have been possible throughout all the ages of the Christian Church? The passage is, “And these signs

* Smith's “Dictionary of the Bible.”

shall follow them that believe. In my name shall they cast out devils; they shall speak with new tongues; they shall take up serpents; and if they drink any deadly thing it shall not hurt them; and they shall lay hands on the sick, and they shall recover.”*

If the laying on of hands is part of the healing, how do the Christian Scientists justify their attempts on patients at a distance? And why do they restrict themselves to the exercise of the healing power only, and disregard all the other endowments specified in the text? Do they speak with new tongues? Could they take up serpents or drink deadly things and yet remain unharmed? Would they take, say, concentrated laurel-water instead of claret for dinner, or eat aconite root instead of horse-radish with roast beef? Why do they not give demonstrations in their churches or temples of the impunity with which they can manipulate venomous snakes and serpents?

When St. Paul, after escaping drowning from shipwreck, was being kindly entertained by the inhabitants of Malta, a viper came out of a bundle of sticks and clung to his hand. The people at once supposed he was a murderer, and that vengeance had overtaken him in spite of his escape from the sea. But when he shook the beast off into the fire and suffered no harm the people changed their minds and thought he was a god. Why do not the Christian Scientists increase the evidences of their power, and improve the estimation in which they are held, by shewing in the manner of St. Paul how unmerited are the imputations of manslaughter against them?

It was foretold that sorcerers and false prophets would arise who would declare signs and wonders, insomuch that if it were possible they would deceive the very elect. Was Christian Science included in this anticipation?

When in 56 A.D. the seven sons of Sceva, the Jew of Ephesus, and other “vagabond Jews and exorcists” made trial of their power of healing, the evil spirit answered them by saying, “Jesus I know, and Paul I know, but who are ye?” And then the man in whom the evil spirit was, leaped on Sceva’s sons and overcame them, and prevailed against

* Mark xvi., v. 17 and 18.

them so that "they fled out of the house naked and wounded." There are, not a few, persons who, knowing the fatal consequences attending the practice of the Christian Scientists, would witness without disturbance to their bowels of compassion the advent of a spirit which would chastise those presumptuous persons as Sceva's sons were treated.

The Pharaoh of 3400 years ago called together the wise men, the sorcerers and the magicians of Egypt, to practise their enchantments and to cast down every man his rod, and they became serpents. But the rod of Aaron swallowed up the rods of all of them. Would it be altogether a misfortune if modern science or public spirit, or both, like Aaron's rod, would swallow up the disciples of Mrs. Eddy?

It was commanded in old time to forbid no man to do miracles in the name of the Master, nor would we quarrel with the Christian Scientists for trying their minds on miracles if they did no harm to others thereby. Our repugnance to their presumption is because they mislead the credulous, the ignorant, and the helpless into supposing that miracles will be wrought at their instigation, and thereby persuade, if they do not indeed enforce, their victims to neglect every physical means for their recovery.

We are not concerned as medical men with the metaphysics of Christian Science. What we resent is the effect of their teaching and practice in cases of organic and infective diseases, and in severe surgical injuries. It is because of their meddling with medicine, not their muddling with metaphysics, that our profession, in the interest of sufferers and in the interest also of the general public, opposes their false doctrine and cries out against their cruel and fatal practice.

The miracles of the Old Testament formed part of the Theocratic government of the Jews, and were wrought for the purpose of impressing an ignorant and semi-barbarous people with the idea of the power of the Deity. To us the striking feature about many of them is the thinness of their veil of the marvellous. As miracles they seem beggared of the miraculous. They were, however, quite sufficient to terrify and excite the wonder of a semi-civilized race whose

simple rudiments of learning made them as "children" in the condition of "slaves." For instance, Samuel called to the Deity for thunder and rain during wheat harvest so that the people might realize their wickedness; and the thunder and the rain came. This brings back to my thoughts a circumstance related, I think, in "She," or some other book by Rider Haggard. Some one, knowing that an eclipse of the sun was due on a particular date, saved himself from being put to death, by publicly foretelling its occurrence and thus leading the natives to fear him as a god or a prophet. There are many nowadays who foretell, like Samuel, what the weather is going to be; such predictions are a part of the news supplied to us by the daily and weekly press. Besides, we offer prayers in churches still for sunshine or showers, and sometimes the rain or the fine weather as the case may be comes as a "post hoc" if not as a "propter hoc."

Then there is the cure of King Hezekiah, who was "sick unto death" from the effects of a boil, but whose life was saved by his own tears and prayers and through Isaiah, who prescribed "a lump of figs" to be applied to the boil. No one in these days, however, would think it wonderful that a fig poultice should bring away the core of a ripe boil in three days.

There is little to venerate or respect in the miracles of the saints of the second, third, and fourth centuries. The miracle associated with the career of St. Ambrose in the fourth century looks like imposture and gullibility. At a time when his influence was on the wane and required vigorous support St. Ambrose had a dream, which led to finding beneath the pavement of the church the remains of two martyrs. The common people crowded to see these venerable relics, and many who were sick were healed by touching the bones. St. Ambrose was in ecstasies over these miraculous cures, and preached eloquent sermons thereon.

This was but a poor and vulgar imitation, however, of the miracle of the man who, when about to be buried, was thrown into the sepulchre of Elisha, and came to life immediately his body touched the bones of the prophet,

The tactics of St. Ambrose remind us of the miraculous cures which were worked on the fanatics at the tomb of the Jansenist deacon, Francois de Paris (Abbé de Paris), in 1730; they also recall the processions of the multitudes one has seen at Lourdes; and the filthy fragments of dressing and the discarded sticks and crutches ostentatiously thrown into the hedgerows near the shrine of miraculous cures, in the South of Ireland. The Paris cemetery St. Medard, where Francois de Paris was buried, became so overrun by pilgrims that the place of the grave was walled up; and hence arose the satirical epigram, “De par le Roi, defense à Dieu de faire miracle en ce lieu.”

All the Ecclesiastical miracles are highly improbable. They resemble those fictitious legends, those mists of error, which have been invented by the imagination of impostors for acceptance by the credulous, to some of which I will in a moment refer.

In B.C. 280 there arose in Alexandria a medical sect known as the “Empirical School.” Its members relied solely on tradition, analogy, and individual experience, and rejected all philosophical theories, and all *a priori* reasoning. The term Empiric in the present day is sometimes given to quacks, *i.e.*, those who practise medicine or surgery, but who have not received a regular medical training. More commonly it is the name applied to qualified men, who rely on tradition and personal experience. By such, anatomy and physiology are considered to have but little connection with practice; the whole object of the art and science of medicine in their view being to obtain practical results by therapeutical agents, to search out specifics for every malady, and to cure disease without troubling to discover its true pathology and pathogenesis.

It was empiricism of this kind which laid our profession so much open to the charge of Charlatanry, and was one of the reasons why it excited the scorn and satire of such men as Petrarch, Montaigne, and Molière.

Empiricism has had its professors in all countries and in all ages since the days of the Alexandrian School. Suetonius relates that the life of Augustus Cæsar was

saved by the physician Antonius Musa, who insisted that hot medicines, in his experience, were the only remedies for the disease from which Cæsar was suffering; all the rest of his doctors had thought the same about cold medicines.

Herodotus tells that the Lybians professed that persons were prevented from having catarrh for the rest of their lives if the veins of the head and temples had been burned and cauterized when they were four years old.

Galen reported a case to prove that leprosy was cured by wine drunk out of a vessel into which a viper had crawled.

Montaigne, the earliest systematic sceptical writer in the French language, published at the end of the sixteenth century an amusing but satirical essay on physic and physicians. He mentions many of the empirical remedies then in use, such as "the left foot of a tortoise, the urine of a lizard, the dung of an elephant, the liver of a mole, and blood drawn from under the right wing of a white pigeon."

Montaigne comments at some length on his own sufferings from stone in the bladder. He avoided being treated by physicians, and no wonder, for he adds, "and for us who have the stone, so scornfully do they use us in our miseries" that they prescribe "the excrements of rats beaten into a powder." He learnt the fallacy of the idea that the blood of a he-goat was a remedy for stone, by having one killed and finding stones within its body. From Montaigne's own account, however, it is clear they were not urinary calculi but bezoars, which are not uncommon in the stomachs of goats, antelopes, and other animals, and which formerly were esteemed as antidotes to all poisons.

Montaigne illustrates what he describes as "the variety and weakness of the rationale of the profession," by citing the reasons given by one set of physicians why aperitive medicines are proper for persons subject to the stone, and the reasons given by another set why aperitive medicines are dangerous to those same persons, by tending "to create gravel, and to occasion a certain and most painful death." Here in this Hospital public opinion has required us to try numerous purely empirical drugs for cancer, such

as chian turpentine, condurango root, violet leaves, molasses, and others—all as entirely without curative effect as the repulsive things mentioned by Montaigne.

Under Arabian and other Oriental influences medicine became mixed up with magic, alchemy, and astrology; and in the Middle Ages it came under the yoke of theological dogma, and was enslaved by superstition. The influence of superstition continued long, and, though scotched, is not even yet killed. The practice of touching as a cure for scorbutic diseases was exercised by all our Sovereigns from Edward the Confessor to the time of Queen Anne, and was especially prevalent in the reign of Charles II. Though it is unfair to the memory of the illustrious physician of Norwich, Sir Thomas Browne, to quote him in illustration of the superstitions which prevailed in his day, without mentioning that in a subsequent work published twelve years later he deliberately attacked them as “Vulgar and Common Errors,” it is nevertheless true that in “*Religio Medici*,” published in 1634, he declared his belief in the Philosopher’s Stone, in witches, in palmistry, and in spirits and tutelary angels; and he rated those who denied the existence of witches as atheists, and “worse than infidels.”

A custom called “*La Couvade*” formerly prevailed in the south-west part of France, and very widely too in other parts of the world, which obliged the husband of a lying-in woman to go to bed and take charge of the baby. It was he who received the congratulations of his friends, in bed; whilst the mother got up and went about her business in the house, as if nothing had happened. Remains of this custom are said to exist among different races even at the present day, namely, in Corsica, Guiana, Borneo, and elsewhere. The explanation was that the father had to expiate original sin; but of late it has been held that he was put to bed to be out of the way for fear that, if he were going about as usual, by some unintentional act he might injure the baby, not physically, but through the spirit.

It was at one time taken for granted in Christian countries, and the view is said to have been sanctioned by Luther, that hail and wind were the works of wizards.

Combe, in his "Constitution of Man,"* relates that in the middle of the eighteenth century the country west of Edinburgh was so unhealthy that every spring the farmers and their servants were seized with fever and ague, and that these visitations were believed to be sent by Providence. After a while the land was drained and the fever and ague disappeared.

Swinburne, in his "Travels through Spain (1775-1776),"† tells that the clergy in the latter part of the eighteenth century were on the point of putting an end to the opera, because they attributed the want of rain to the influence of that ungodly entertainment.

In 1760 the physicians of Madrid opposed the cleansing of the streets of the city, as they considered the smells emitted from them were wholesome. The argument was that "the air being sharp and piercing, it was extremely probable that bad smells made the atmosphere heavy, and in that way deprived it of some of its injurious properties." But Spain was a particularly backward country, for Townsend during his journey through Spain in 1792 found that the leading physician of the country doubted the truth of the circulation of the blood, which Harvey had proved 150 years before. Even in the beginning of the nineteenth century there was not a lecture room for practical instruction in the colleges of either Madrid, Barcelona, or Cadiz.

As long as it was forbidden to question the teaching of the Church, physical science made but slow progress, scientific investigation was under great restraint, and scientific investigators were frequently punished as heretics.

As long as periodic attacks of fever and ague were believed to be visitations sent by God, it was heresy to make efforts to prevent them.

As long as a lengthy period of draught was regarded as a Divine punishment for indulgence in ungodly amusements, it was conceivable that the closure of the theatres and opera houses might bring down the gentle rain from heaven as well as the drop curtain of the stage.

But as soon as fever and ague disappeared with effectual

* Edinburgh, 1847.

† Printed in London in 1787.

drainage, it was possible to realize that the cause of these diseases was the stagnant state of the land, and not the vengeance of an offended Deity. And when the rainfall, which at one time makes the corn grow, and at another ruins the crops before they can be garnered up by the farmer, is ascertained to be a necessary consequence of other antecedent occurrences, and its variations are brought under known laws of Nature, then probably the prayer for rain will be expunged from our prayer-books and church services.

In 1853 a severe epidemic of cholera spread over this country, and was very destructive in Scotland. The clergy, supported by the people, of Scotland applied to the Home Secretary to know if the Queen would appoint a day for a national Fast, which was the most effectual way in their judgment of propitiating the Deity to stay such a terrible pestilence. This view was in accord with the superstitious fancies as to the origin of disease then prevalent in Scotland, and which were once almost universally cherished alike by Pagans, Catholics, Protestants, and Presbyterians throughout the world. Lord Palmerston, the Home Secretary at the time, had the courage to set at defiance such narrow notions. On behalf of the English Government he informed the Presbytery of Edinburgh "that the affairs of this world are regulated by natural laws, on the observance or neglect of which the weal or woe of mankind depends," and he advised that it was better to cleanse than to fast, and that under the circumstances activity was preferable to humility. He urged that efforts should be made to destroy the causes of disease by improving the dwellings and other conditions of the poor. If this were done he doubted not that all would go well, otherwise pestilence would be sure to revisit them, "in spite of all the prayers and fastings of a united but inactive nation."

The action of Lord Palmerston shewed the triumph of common sense over prejudice; of practical wisdom over ignorant helplessness; of science over the old theological, as distinct from religious spirit, which formerly made martyrs of scientific men by persecution and sometimes by death.

In the half-century which has elapsed since the correspondence just referred to between a member of the British Government and the heads of the Scottish Presbyterian Church, Science has made a progress unparalleled in any previous period. At that date the continued fevers, and diphtheria, erysipelas, pyæmia, septicæmia, and other septic diseases were ever present mysteries. Their immediate causes were unknown, their treatment tentative and uncertain, their prophylaxis of the most general and miscellaneous character. To-day all is changed. The cause of cholera is sought for amongst the microbes, and the majority of infective diseases have been proved to be due to the invasion by specific organisms, which come from without and multiply within the body. Prevention and treatment, immunity and cure, have been, thanks to experiment, placed upon a definite and sure foundation. The very microbes which cause the disease are utilized, directly or indirectly, as the means of protection against and palliation of it.

But although the irrational opinions formerly entertained in regard to the origin of disease in particular, and to the phenomena of Nature in general, are well-nigh extinct, and although the views of science and of religion (as distinct from the theological view) are well in accord as to the uniformity and order of the material world, differences still arise in reference to the complex nature of man, and the relation of the mental and the material parts of him.

It is too much to expect that all opposition to science and research have ceased, and that superstition is got rid of altogether.

Though the struggle between theology and science is probably over, and plague and pestilence, as well as earthquakes and famine, are now universally admitted to be the natural effects of other antecedent material events, research by experiment is at the present time being hotly resisted by a band of no doubt well-meaning persons, whose intentions are good but whose methods are tortuous. This band having, by way of exciting prejudice, stigmatized experiments on living animals with the name of Vivisection—as though all instead of a mere fraction of an unit per cent.

of them were cutting experiments—has, under the assumed banner of humanity, moved a great charitable fund for the benefit of the sick poor to exclude from its bounty any direct or indirect assistance to medical education or research; and has been the cause of the appointment of a Royal Commission on Vivisection, whose report we are at this moment eagerly awaiting, though without fear or misgiving as to the result.

Within the last few days we have read* (to quote the words of Lord Curzon's letter to "The Times" on November 4th) of an "alleged interview between a notoriously hysterical journalist and the spirit of the illustrious departed, to which publicity has been given," as a political manœuvre in favour of an unpopular Budget. We have had at the same time the opportunity of following a trial of, and a verdict with damages and a £1000 against, a fraudulent hypnotist, in support of whom persons were found to bear witness to his marvellous cures and to his indifference to the dangers of the "Cage of Death." The judgment of Mr. Justice Darling on this case deserves careful perusal. There is also to be seen in the latest issue of a journal whose statements carry much weight with many of its numerous readers, the following extraordinary editorial admission: "We have no difficulty in believing that ulcers that have a malignant aspect may be healed by the hope that comes from a potent suggestion. We have ourselves known of more than one case in which every clinical sign of malignant disease of the stomach was present, and in which a cure was effected by means that could only have derived their potency from suggestion."

One of the results of "looking back" is that we realize how phases of opinion and cycles of thought, as well as epidemics of disease, are prone to recur. It is possible for the oldest amongst us to recall periods at which

* It is well known than in enumerating the cabins on board ships and the bedrooms in hotels the number 13 is omitted; but the most astonishing instance of present-time superstition is the recent statement made by Lord Crewe in the House of Lords on the Irish Land Bill, namely, that the number of the Congested Districts Board "had been altered from thirteen, which was regarded as unlucky." ("Observer," Nov. 28th, 1909.)

mesmerism, hypnotism, thought-reading, table-turning, and faith-healing were temporarily in vogue, and then passed away again out of favour or notice. Just now there is a phase of opinion—entertained, too, by some honourable and distinguished men—that there is scope and reason for the exercise of “Suggestion” as a remedial and curative agent; and it has been seriously put forward that the already vastly overburdened medical curriculum should be still further charged by the addition of “a sound psychological training,” so that every medical practitioner shall be able to employ “mental therapeutics,” and to engage in “the scientific practice of suggestion.”

Surely it behoves the leaders of medical thought and opinion to walk most warily in this direction. A committee to make a careful scientific investigation of the nature and subsequent history of the cases asserted to have been cured by Christian Science, by hypnotism, and at Lourdes, might make a valuable contribution as to the questions involved; but I venture to think it would be highly undesirable to combine the practice of “suggestion” with the ordinary practice of our profession. Such a course seems to offer encouragement to those outside the profession to make arrogant pretensions to curative powers; and might possibly lead to unfounded accusations and regrettable indiscretions even within the profession itself, especially if the character of the cases which are regarded as proper subjects for this treatment be remembered. Even if it should come to be decided that a set of persons should be properly trained to practise treatment by suggestion, I am not quite sure that the doctor should have more to do with the treatment than merely to examine and pronounce whether the case is suitable for its employment.

I will conclude by repeating what I have previously said in the course of this Address, namely, that all actions involve belief, and all successful action true belief, and that to arrive at true belief in medicine we must go through scientific scepticism to knowledge, through doubt to certainty, and replace empiricism by experiment and superstition by research.